| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-1 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1, Introduction | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:
Addendum H.1 discusses closure activities for the Low-Level Burial Ground (LLBG) Trenches 31-34-94 Operating Unit Group (OUG).

**Comment:**
Closure requirements apply to individual dangerous waste management units, not to the administrative grouping of units referred to as unit groups. The cited text should be revised to read:

"Addendum H.1 discusses closure activities for dangerous waste management units in the Low-Level Burial Ground (LLBG) Trenches 31-34-94
Operating Unit Group (OUG)."

See also the first sentence of Section A1.

**See also comments FS1-2; CW-1,-7**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): Deb Alexander |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; revise text as indicated

**Other Information:**
Discussed with CHPRC on 4/21/2015. The text will be revised to clarify it is the DWMUs that are being closed.

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-2 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.1, Facility Contact Information, and H1.2, Facility Description | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

Section H1.1

The Hanford Facility is owned by the U.S. Government and operated by the U.S. Department of Energy (DOE) and its contractors (CPRC, WCH, etc.).

Section H1.2

The Hanford Facility, located in southeastern Washington State, is owned by the U.S. Government and is managed and operated by DOE and its contractors (e.g. CHPRC, WCH, etc.).

**Comment:**

Rev. 8c of the Hanford dangerous waste permit is issued not only to DOE-RL, but also to the various Permittees identified as co-operators. While the cited text is factually correct, it is incomplete, and should be revised to appropriately reference Permittees that are co-operators along with DOE-RL and DOE-ORP.
**See also comments FS1-1; CW-1,-7**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): **Deb Alexander** |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; revise text as indicated above in red.

**Other Information:**
Discussed with CHPRC on 4/21/2015. The text will be revised to include the contractor name. Will also change "Facility" to "OUG" to avoid confusion with the overall Hanford Facility.

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-3 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.5, Dangerous Waste and Used Oil Management Units | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

The LLBG Trenches 31-34-94 OUG includes the following dangerous waste management units:

- LLBG Trench 31 Disposal Cell (not included in this Closure Plan)
- LLBG Trench 34 Disposal Cell (not included in this Closure Plan)
- LLBG Trench 94 Disposal Cell (not included in this Closure Plan)
- LLBG Trench 31 Waste Storage and Treatment Pad (not included in this Closure Plan)
- LLBG Trench 34 Waste Storage and Treatment Pad (not included in this Closure Plan)
- FS-1 Outdoor Container Storage Area (Closing Unit)

**Comment:**

For completeness, clarity and accuracy, please add notations to the LLBG Trench 31 and 34 Disposal Cell lines, and the LLBG Trench 31 and 34 Waste Storage and Treatment Pad lines that they are not included in this closure plan, consistent with the notation included in the LLBG Trench 94 Disposal Cell line.

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

**Add the red text above to be consistent and clear in this section.**

| Resolution Required? (Y/N) | Permit Writer (Ecology): **Deb Alexander** |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; revise text as indicated above in red.

**Other Information:**

Discussed with CHPRC on 4/21/2015. Section H1 is the Introduction to all the closure plans for the OUG. Section H1.5 is a listing of all the DWMUs in the OUG. The text will be revised to delete any reference to what is "(not included in this Closure Plan)" and "(Closing Unit)".

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-4 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A1, Introduction | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

This closure plan complies with WAC 173-303-610(2) through WAC 173-303-610(6), "Dangerous Waste Regulations," "Closure and Post-Closure," and represents the baseline for closure and the enforceable compliance requirements for conducting closure.

**Comment:**

This closure plan represents not just the baseline, but the enforceable compliance requirement for conducting closure. Please revise the cited text accordingly.

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| **Resolution Required? (Y/N)** | **Permit Writer (Ecology): Deb Alexander** |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; revise text as indicated above in red.

**Other Information:**
Discussed with CHPRC on 4/21/2015. The text will be revised to incorporate the suggested change that the closure plan contains the enforceable compliance requirements for conducting closure.

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-5 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A1.1, Unit Description | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

☐ Contingency ☐ Training ☐ WAP ☐ QA/QC ☐ GW/Vadose
☐ Closure ☐ Inspection ☐ Corrective Action ☐ WAC ☐ Omnibus
☐ Other:

**Key Comment Summary:**

**Condition Text**:
From November 2007 through September 2008, FS-1 was used for the storage of LLW, mixed low-level waste (MLLW), and TSCA-PCB LLW containers prior to disposal into Trenches 31 and 34.

**Comment:**
Storage for disposal of wastes regulated for disposal under TSCA in a unit that does not meet the technical standards of 40 CFR 761.65(b), or that qualified for interim status or was permitted for storage under Ecology's dangerous waste program raises compliance issues that EPA will separately address.
**See also comment CW-8**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): Deb Alexander |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; EPA to address separately.

**Other Information:**
No Ecology action required.

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-6 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1 | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:
These numeric cleanup levels will be calculated according to MTCA Method B unrestricted use standards current at the time of closure.

**Comment:**
See the comment **R5-5** in the T-Plant closure plan comments.

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.): **From T Plant R5-5:**

WAC 173-303-806(3) requires that permit conditions reflect compliance with dangerous waste regulations in effect as of the effective date of the permit (or in this case, a permit modification). Numeric cleanup standards must be specified in the permit reflecting standards of WAC 173-303-610 as of the anticipated effective date of the permit modification date. Given that closure of the R5 unit is expected to begin immediately following the effective date of the permit modification incorporating the closure plan into the permit, there will be no discrepancy between what must be.

To address this issue, EPA recommends that this text be re-worded as follows:

> "These numeric cleanup levels have been calculated according to the requirements of WAC 173-303-610(2)(b)(i) in effect as of the effective date of the permit modification."

Ecology may need to reconcile the requirements of -610(2)(b)(i), which provide that closure performance standards are those of MTCA Method B "as hereafter amended," with the requirements of -806(3), which require permit requirements to be based on regulations in effect as of the effective date of the permit (or permit modification.

That said, EPA acknowledges that the sampling and analysis plan does document concentration-based closure performance standards.

**Modify the text as indicated, but for the LLBG FS1 Outdoor Storage Area Closure Plan.**
**See also comments CW-5,-6,-26,-28,-34,-35; FS1-12,-14,-15; R5-3,-5,-23,-25,-31**

| Resolution Required? (Y/N) | Permit Writer (Ecology): Deb Alexander |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; revise text as indicated above.

**Other Information:**
Discussed with CHPRC on 4/21/2015. The text will be revised to incorporate the suggested change.

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-7 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1 | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

Sampling and analysis will confirm clean closure for the FS-1 gravel and soil.

**Comment:**

This language is not consistent with text in Attachment B. More specifically, the Summary of Sampling Design" table in Attachment B states:

> "Working (Null) Hypothesis The median(mean) value at the site exceeds the threshold"

In other words, the sampling model documented in Attachment B assumes that the FS-1 storage unit contains contamination above closure performance standards until sampling data provides sufficient confidence that this assumption can be rejected. Therefore, the cited closure plan text should be re-written to state:

> "Sampling and analysis will be used to determine whether the null hypothesis that contamination at the FS-1 storage unit exceeds closure performance standards."

Similarly, the following sentence should be rewritten to read:

> "Should sampling and analysis not provide a basis that the null hypothesis can be rejected, such an event will be considered an unexpected event during closure, and appropriate permit modifications to the closure plan, including addressing the potential for releases to groundwater, will be discussed with the Washington State Department of Ecology."

While these points may appear small, they are central to the statistical approach proposed for verification of compliance with closure performance standards.

See also the last bullet in Section A3.

**See also comments CW-7; FS1-14; R5-8,-15,-18,-21,-23**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): Deb Alexander |
|---|---|

| **Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*: |
| --- |
| We agree; revise text as indicated. |
| **Other Information:**<br>Discussed with CHPRC on 4/21/2015. The text will be revised (multiple instances) to clarify application of the null hypothesis. |

| **Reviewer Concurrence (Initials):** |
| --- |

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-8 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A3, Closure Activities | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

As a storage unit, clean closure determination for FS-1 is based on a review of the operational history, operating records, waste management records, and a visual inspection of the area to verify that waste related staining is not present. Based on these reviews, FS-1 is concluded to be in a safe configuration and will be clean closed under RCRA.

**Comment:**

The absence of visually-observable waste staining, in and of itself, is not adequate to demonstrate compliance with concentration-based performance standards. The presence of waste staining may legitimately be used as the basis for biased sampling locations in addition to the systematic sampling proposed, however.

What are the criteria for a "safe configuration?" Is it simply the absence of visually-observable waste staining? An unsupported statement that the unit is in a safe configuration in the absence of any objective criteria or any supporting data relative to such criteria seems highly subjective and difficult to support.

**See also comments CW-27,-29; FS1-10; R5-7**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): **Deb Alexander** |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree, revise text as follows: (1) make sure visible staining statements are clear: absence of visible staining by itself is not adequate to demonstrate no contamination is present or clean closure has been met and (2) need to give supporting reasons for what determines “safe configuration” or remove statement.

**Other Information:**

Presence of visible staining can be used as the basis for additional judgmental samples. The absence of visible staining cannot in general be used as the sole basis for concluding that contamination is absent.

Discussed with CHPRC on 4/21/2015. The text will be revised to incorporate the suggested change.

| Reviewer Concurrence (Initials): |
| --- |
| |

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-9 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A3.1. Health and Safety Requirements | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:
N/A

**From T Plant R5-10:**
The Permittees have instituted training or qualification programs to meet training requirements imposed by regulations, DOE orders, and national standards such as those published by the American National Standards Institute/American Society of Mechanical Engineers. For example, the environmental, safety, and health training program provides workers with the knowledge and skills necessary to execute assigned duties safely.

**Comment:**
See comments on the corresponding section of the T-Plant 221-T R5 storage area closure plan.

**From T Plant R5-10:**
This training program seems far more comprehensive than the training requirements documented in Addendum G. How do the two sets of requirements relate? If DOE-RL is in fact relying on the broader set of requirements in the highlighted text to comply with dangerous waste training requirements, then Addendum G must clearly reflect the full scope and detail of the training program.

**See also comments CW-11,-22; R5-9,-10,-11,-12**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): Deb Alexander |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; as currently written Addendum G does not adequately cover all the requirements of WAC 173-303-330(1) and -806(4)(a)(xii). Working with Energy to correct this, but no set answer yet (4-9-14).

**Other Information:**
Discussed with CHPRC on 4/21/2015. The text will be revised to ensure the training requirements are consistent with those in Addendum G.

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-10 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A3.3, FS-1 Outdoor Storage Area Operating Records Review and Visual Inspection | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

A visual inspection was completed on July 31, 2013 to identify any dangerous waste related staining in FS-1. No waste related staining was identified during the visual inspection; therefore, only confirmation sampling and analysis to verify clean closure will be performed.

**Comment:**

It is not clear how reliable visual inspection of an outdoor gravel pad might be in identifying waste staining nearly five years after waste containers were removed from the unit, particularly considering the high winds and dusty conditions frequently encountered at the Hanford facility. This concern is consistent with the previous Comment FS1-8 that noted visual inspection should be limited to identification of specific areas subject to biased sampling in addition to systematic closure performance verification sampling.

This text suggests that it is possible to differentiate "dangerous waste related staining" from any other sort of staining, such as from LLW or TSCA-PCB containers. What criteria were employed to differentiate dangerous waste related staining from any other sort of staining?

**See also Comment FS1-7 on the proposed method of sampling (and CW-7; FS1-14; R5-8,-15,-18,-21,-23). See also comments CW-27,-29; FS1-8; R5-7 on visual staining.**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): Deb Alexander |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; use and meaning of visual staining in the contaminant identification process should be clarified as indicated above.

**Other Information:**

Presence of visible staining can be used as the basis for additional judgmental samples. The absence of visible staining cannot in general be used as the se basis for concluding that contamination is absent.

Discussed with CHPRC on 4/21/2015. The text will be revised to clarify that the justification for confirmation sampling is based on more than just visual inspection. Text will be added to say "Based on

the operating record review, waste management records and the visual inspection, then only confirmation sampling and analysis will be performed."

**Reviewer Concurrence (Initials):**

| **Comment # & Initial** | **Permit Section/Condition #/ Addendum/Attachment: (Number & Section)** | **Reviewer(s):** |
|---|---|---|
| FS1-11 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1. A3.6 Decontamination | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

☐ Contingency ☐ Training ☐ WAP ☐ QA/QC ☐ GW/Vadose
☐ Closure ☐ Inspection ☐ Corrective Action ☐ WAC ☐ Omnibus
☐ Other:

**Key Comment Summary:**

**Condition Text**:

Decontamination activities are not planned for FS-1.

**Comment:**
This sentence should be edited to read:

"Decontamination activities are not planned for the FS-1 dangerous waste management unit, unless the null hypothesis that contamination exists above closure performance standards cannot be rejected on the basis of sampling and analysis. Such an event will be addressed as documented in Section A2.1."

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| **Resolution Required? (Y/N)** | **Permit Writer (Ecology): Deb Alexander** |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; revise text as indicated.

**Other Information:**
Discussed with CHPRC on 4/21/2015. Decontamination here is referring to removal of surface contamination from equipment and structures, which are not present in FS-1. Removal of contaminated environmental media is addressed in Section A3.7.

| Reviewer Concurrence (Initials): |
| --- |
| |

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-12 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A3.9.1 Sampling and Analysis Plan | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

Sampling and analysis activities will meet applicable requirements of SW-846, ASTM standards, EPA-approved methods, and *Hanford Analytical Services Quality Assurance Requirements Documents (HASQARD)* (DOE/RL-96-68).

**Comment:**

See comments on similar text in the 221-T R5 storage area closure plan.

While it is implied that each sample will be analyzed for all target analytes, for clarity, there should be an explicit statement to this effect.

**From T Plant R5-19:**

What decision uncertainty is considered acceptable with regard to verification of compliance with concentration-based closure performance standards? What are the specific "applicable requirements" of the enumerated standards, and are they adequate to ensure that decisions based on the resulting data will be within acceptable decision uncertainty limits? For example, Section 1.0 of the *HASQARD* states "The use of the HASQARD will ensure data of known quality and technical defensibility of the methods used to obtain that data." Simply having data of known quality does not ensure that the data are of acceptable quantity and quality for their intended decision-making purpose. Indeed, having data of known quality is equally applicable to a demonstration that it is NOT of acceptable quantity or quality as it is to a demonstration that it is acceptable.

It is of critical importance that the closure plan and its accompanying sampling and analysis plan and project-specific quality assurance/quality control project plan clearly document data acceptance criteria that can be used to determine whether each individual data element is acceptable for its intended decision-making purpose. It is simply not the case that data obtained from use of SW-846, ASTM, EPA-approved, or *HASQARD* documented methods are universally acceptable for their intended decision-making purposes. Such a demonstration must be made on the basis of project-specific.

EPA does not intend that this comment suggests that the *HASQARD* is not defensible – as "A flexible framework for meeting the client's special quality criteria based on project needs as determined by the data quality objective (DQO) planning process" it is very appropriate. However, the *HASQARD* appears to be structured as just that – a framework that can be applied on a project-specific basis, not a set of absolute criteria that ensure data are of acceptable quantity and quality for any particular project.

**See also comments CW-24,-38; FS1-15,-16; R5-19,-26**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

| | |
|---|---|
| **Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.): | |
| **Resolution Required? (Y/N)** | **Permit Writer (Ecology): Deb Alexander** |
| **Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*: | |
| We agree; need a QAPjP and specific wording that documents data acceptance criteria that can be used to determine whether each individual data element is acceptable for its intended decision-making purpose. | |
| **Other Information:**<br>Discussed with CHPRC on 4/21/2015. Requirements to ensure the data is of sufficient quantity and quality for decision making are addressed in Sections A3.9.8 Data Quality, A3.9.9 Data Verification, A3.9.10 Data Validation, and 3.9.11 Verification of VSP Input Parameters. See also Tables A-7 Analytical Performance Requirements, and A-8 Quality Control Sampling Summary. Text will be added to say data quality assessment will be performed in accordance with EPA/600/R-96/084 "Guidance for Data Quality Assessment". Results of data reviews and confirmation of clean closure will be reported in the supporting documentation for closure certification. | |
| | **Reviewer Concurrence (Initials):** |

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-13 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A3.9.5 Sampling Design | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

**Comment:**

See comments on the sampling design and use of the VSP software in comments for the 221-T R5 storage area, as well as comments informally provided to Ecology on the draft version of this closure plan.

**From R5-22:** This statement is not supported by documentation provided in support of the proposed sampling design. In particular, the section "Selected Sampling Approach" in Attachment B states "One disadvantage of systematically collected samples is that spatial variability or patterns may not be discovered if the grid spacing is large relative to the spatial patterns." In this instance, the proposed sampling grid is indeed large with respect to the expected spatial pattern, which is the footprint of a typical waste storage container, such as 208-l drum. In this instance, the reported area of each grid cell is 91 $ft^2$, whereas the projected area of a 208-l drum is 4.9 $ft^2$. Thus, the sampling grid is in fact large with respect to the expected spatial pattern. EPA concludes that the proposed sampling grid is not appropriate for verification of compliance with closure performance standards for the 221-T R5 storage area.

EPA notes that Ecology Publication 94-111, "Guidance for Clean Closure of Dangerous Waste Units and Facilities" discusses appropriate methods for designing sampling plans appropriate for sites where contamination is or may be characterized as hot spots, including use of the methods documented in Gilbert (See the references section to Ecology Publication 94-111). In particular, see Section 7.2.3, Sampling for Hot Spots. The sampling plan design needs to be revised after consideration of this guidance.

**See also comments FS1-22; R5-22,-32,-33,-34,-35; 271-T-1**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): **Deb Alexander** |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; Ecology is looking at the VSP outputs provided with each DWMU closure plan, and evaluating their adequacy with regards to the unit being sampled.

**Other Information:**

Program wide understanding of VSP is needed; meetings were held to discuss VSP. Ecology is requesting info from Energy to examine how VSP was applied in each DWMU - **Received and in process**.

Discussed with CHPRC on 4/21/2015. The sampling design is addressed in Section A3.9.5. Based on the operating record review, waste management records and visual inspection, there is no reason to suspect residual contamination or hot spots which need focused sampling. Area wide sampling is planned, consistent with the guidance in Ecology publication 94-49, "Guidance on Sampling and Data Analysis Methods". The application of VSP in developing the sampling design is described. Text will be inserted to clarify the decision rule for confirming clean closure and compliance with cleanup standards. Justification for the VSP input parameters will be provided along with the rationale for selecting a triangular grid shape. The resulting number of samples and grid size determined by VSP will be identified.

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-14 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A3.9.6 Sampling Methods and Handling | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

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|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

1. Grab sample matrix will consist of gravel and soil collected in pre-cleaned sample containers taken at a depth of 0 to 15.24 cm (0 to 6 in.) below ground surface. For the purpose of this SAP, ground surface is defined as the exposed surface layer once loose gravel has been moved aside. To gather the most representative sample, loose gravel will be moved aside to expose the surface soil and compacted gravel.
2. Once the compacted gravel and soil are sampled, the sampled media will be screened to remove material larger than approximately 2 mm (0.08 in.) in diameter.
3. To ensure sample and data usability, sampling will be performed in accordance with established sampling practices, procedures, and requirements pertaining to sample collection, collection equipment, and sample handling.

**Comment:**

1. To the extent that loose gravel exists that will be moved aside before sampling in order to obtain "the most representative sample," it suggests visual inspection to identify evidence of waste staining would "see" the overlying loose gravel, not the underlying soil and compacted gravel. In more technical terms, the loose grave and underlying surface soil and compacted gravel constitute two distinct strata within the study area. Therefore, EPA concludes that visual examination of the FS-1 storage area cannot reliably identify evidence of waste staining in the very strata that is deemed the source of "the most representative sample" for purposes of sampling.
2. What is the basis for proposing to screen samples for purposes of removing particles larger than 2 mm? Why would any contamination that might exist not be associated with particles larger than 2 mm? EPA is not aware of any physical, chemical or biological process that would conclusively segregate potential contamination on the basis of soil particle size to the extent that soil particles greater than 2 mm do not warrant sampling. This proposal must be deleted.

**See comments on this text in the 221-T R5 storage unit closure plan**. **From R5-23:** Section D3.10.5 clearly states that soil and gravel will be sampled. This section says asphalt will be sampled. Which is it? The closure plan must be revised to eliminate these inconsistencies and contradiction.

How will staining or discoloration of dark/lack asphalt be observed? It seems unlikely that if spills occurred, residual staining would be observable on asphalt. This point casts considerable doubt on a significant element of this closure plan, which is that visual observation documents the absence of evidence of spills or releases such as sampling.

These "established" sampling practices, procedures and methods must be either explicitly stated in the closure plan, or incorporated by reference. Otherwise, Ecology has absolutely no basis to determine whether or not they are appropriate or defensible for this specific sampling activity.

**See also comments CW-7; FS1-7; R5-8,-15,-18,-21,-23**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| **Resolution Required? (Y/N)** | **Permit Writer (Ecology): Deb Alexander** |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; these concerns need to be addressed in the Closure Plan SAPs. Sampling procedures and analytical methods must ensure that samples/analyses meet the regulatory requirements for closure. Resulting data are of sufficient quality and quantity to for their intended decision making purposes.

**Other Information:**

Discussed with CHPRC on 4/21/2015. The gravel on the surface is removed as natural processes may cause the surface concentrations of any contaminants to be reduced. The underlying soil particles have greater surface area and smaller voids for retaining any contaminants. Visual examination is not the sole consideration in determining the need for sampling.

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-15 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A3.9.7 Analytical Methods | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

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|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

N/A **From T Plant R5-25:** All analyses and testing will be performed consistent with laboratory agreements, laboratory analytical procedures, and *HASQARD*. The approved laboratory must achieve the lowest practical quantitation limits (PQLs) consistent with the selected analytical method to confirm clean closure levels. If a target analyte is detected at or above the clean closure level but less than the PQL of the analytical method, the Washington State Department of Ecology will be notified and alternatives will be discussed to demonstrate clean closure levels.

**Comment:**

See comments on the corresponding section of the 221-T R5 storage area closure plan. **From T Plant R5-25:** This is not appropriate. The specific methods, agreements and procedures to be used must be documented or referenced in the closure plan. Otherwise, Ecology has no basis to evaluate whether or not data from sampling conducted "consistent with laboratory agreements, laboratory analytical procedures, and HASQUARD" are adequate or appropriate to the specific decisions to be made under this closure plan.

EPA does note that the following paragraph does reference Table D-4 (*A-4 in LLBG*), which is appropriate.

The text "If a target analyte is detected at or above the clean closure level but less than the PQL of the analytical method, the Washington State Department of Ecology will be notified and alternatives will be discussed to demonstrate clean closure levels." Is not unreasonable. However, the closure plan must establish specific data acceptance criteria that ensure that data meeting the criteria will result in closure decisions within an acceptable degree of uncertainty. Data that do not meet the acceptance criteria must be rejected, even if the Ecology notification and discussion takes place as described. The quality assurance project plan should also address the circumstance when the quantity of acceptable data fails to meet the completeness criterion established as part of the data acceptance tests, and what corrective action is to be taken when the completeness criterion is not met.

**See also comments CW-24,-38; FS1-12,-16; R5-19,-26**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| | |
|---|---|
| **Resolution Required? (Y/N)** | **Permit Writer (Ecology): Deb Alexander** |

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree: (1) include the specific methods, agreements and procedures to be used must be documented or referenced in the closure plan. (2) The closure plan must establish specific data acceptance criteria that ensure that data meeting the criteria will result in closure decisions within an acceptable degree of uncertainty. Data that do not meet the acceptance criteria must be rejected, even if the Ecology notification and discussion takes place as described.
Need a QAPjP - The quality assurance project plan should also address the circumstance when the quantity of acceptable data fails to meet the completeness criterion established as part of the data acceptance tests, and what corrective action is to be taken when the completeness criterion is not met.

**Other Information:**
Discussed with CHPRC on 4/21/2015. The PQL values for all the COPCs are considerably less than the performance standards and this is not anticipated to be an issue for FS1. The comment appears to be taken from the R5 area at T Plant. Requirements to ensure the data is of sufficient quantity and quality for decision making are addressed in Sections A3.9.8 Data Quality, A3.9.9 Data Verification, A3.9.10 Data Validation, and 3.9.11 Verification of VSP Input Parameters. See also Tables A-7 Analytical Performance Requirements, and A-8 Quality Control Sampling Summary. Text will be added to say data quality assessment will be performed in accordance with EPA/600/R-96/084 “Guidance for Data Quality Assessment”. Results of data reviews and confirmation of clean closure will be reported in the supporting documentation for closure certification.

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-16 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A3.9.8 Quality Control | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

**From T Plant R5-26:** The QC procedures must be followed in the field and laboratory to ensure that reliable data are obtained. Field QC samples will be collected to evaluate the potential for cross-contamination and provide information pertinent to field sampling variability. Field QC sampling will include the collection of full trip blank, field transfer blank, equipment rinsate blank, field duplicate, and field split samples. Laboratory QC samples estimate the precision and bias of the analytical data. Field and laboratory QC samples are summarized in Table D-5 (*A-5 in LLBG*).

**Comment:**

See comments on the corresponding text in the 221-T R5 storage area closure plan.

EPA notes that the essential function of a quality assurance/quality control program is to ensure data are of sufficient quantity and quality for their intended decision-making purpose, not just that the data are "reliable." QA/QC requirements, including data quality acceptance criteria, must be documented in the closure plan that ensures that this function is satisfied.

From T Plant R5-26: EPA does not disagree with the premise of this text. Presumably, all field QC samples will be analyzed. The closure plan, however, does not appear to provide any criteria for evaluating the results of the field QC samples. For example, how will data from analysis of field duplicates be analyzed? Table D-4 (*A-4 in LLBG*) seems to provide standard analytical method criteria for precision (RPD), but these criteria seem to apply to results from laboratory duplicate samples, not field duplicate samples (footnote B states that "Precision criteria for batch laboratory replicate matrix spike analyses or replicate sample analyses.). Table D-5 (*A-5 in LLBG*), which does address field QC samples, does document the characteristic of the data to be evaluated for each field QC sample, but provides no decision criteria whatsoever.

The closure plan, its sampling plan, and the corresponding quality assurance project plan must include data acceptance criteria for evaluation of all QC samples, both field and laboratory. This is a particularly important issue, given the point noted in Comment R5-8 concerning extraction of organic constituents from asphalt.

**See also comments CW-24,-38; FS1-12,-15; R5-19,-26**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| | |
|---|---|
| **Resolution Required? (Y/N)** | **Permit Writer (Ecology): Deb Alexander** |

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; revise the tables to correct the items listed above.

**Other Information:**

Discussed with CHPRC on 4/21/2015. Requirements to ensure the data is of sufficient quantity and quality for decision making are addressed in Sections A3.9.8 Data Quality, A3.9.9 Data Verification, A3.9.10 Data Validation, and 3.9.11 Verification of VSP Input Parameters. See also Tables A-7 Analytical Performance Requirements, and A 8 Quality Control Sampling Summary. Text will be added to say data quality assessment will be performed in accordance with EPA/600/R-96/084 "Guidance for Data Quality Assessment". Results of data reviews and confirmation of clean closure will be reported in the supporting documentation for closure certification. The text will clarify that data verification, validation, and DQA includes the primary samples and the quality control samples being collected.

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-17 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1, Table A-5, Soil Analytical Performance Requirements | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

☐ Contingency ☐ Training ☐ WAP ☐ QA/QC ☐ GW/Vadose
☐ Closure ☐ Inspection ☐ Corrective Action ☐ WAC ☐ Omnibus
☐ Other:

**Key Comment Summary:**

**Condition Text**:
See comments on the corresponding table, including footnotes, of the 221-T R5 storage area closure plan. **See T Plant R5-27**

Tables *A-4* and *A-5* in LLBG Closure Plan

**Comment:**

**From T Plant R5-27:** Are the analytical performance standards in this table equally applicable to asphalt sample results? If so, then the closure plan must include specific language to this effect. Otherwise, analytical performance requirements specific to analysis of asphalt must be provided.

[Comment 1] Table D-4 (*A-4 in LLBG*) included a column for constituents with both carcinogenic and non-carcinogenic properties. While implied, the closure plan should be explicit that when values for each are provided, the closure performance standard is the numerically lowest value of the two.

[Comment 2] The table entry for arsenic indicates a closure performance standard of 0.667 mg/kg, but a practical quantitation limit of 10 mg/kg. Given that this practical quantitation limit exceeds the decision criteria by a factor of more than 10, it is not acceptable. More specifically, data meeting the required PQL will not result in data of accept able quantity or quality for its intended decision-making purpose. Table D-4 (*A-4 in LLBG*) must be carefully reviewed to ensure that all QC parameters will in fact yield data of acceptable quantity and quality for their intended decision-making purpose.

[Comment 3] Footnote C, which applies to parameters where the accuracy requirement (%recovery) is listed as "N/A," states "Determined by the laboratory based on historical data or statistically derived control limits. Limits are reported with the data. Where specific acceptance criteria are listed, those acceptance criteria may be used in place of statistically derived acceptance criteria." Essentially this says that as long as analysis of closure verification samples meet historically observed performance standards of the laboratory analytical method, the data are acceptable. This does not make sense, as the observed historical performance of a laboratory analytical method has absolutely nothing to do with the acceptable decision uncertainty for a specific project to which the laboratory data are to be applied. Laboratory (and field, for that matter) accuracy requirements MUST be based on what is required for decisions to be made based on the data to be within acceptable uncertainty limits, not what the laboratory method historically produces.

See the comment R5-5 in the T-Plant closure plan comments.

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| **Resolution Required? (Y/N)** | **Permit Writer (Ecology): Deb Alexander** |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

Add information and language to specify the requirements for asphalt samples (see first paragraph above).
Tables D-4 (*A-4 in LLBG*) needs to be reviewed for analytical performance requirements specific to the media being sampled.
Table D-4 (*A-4 in LLBG*) needs to be "cleaned up"; need to add aquatic receptors and environmental protection
Tables D-4 and D-5 (*A-4 and A-5 in LLBG*) must be carefully reviewed to ensure that all QC parameters will in fact yield data of acceptable quantity and quality for their intended decision-making purpose.

**Other Information:**
Discussed with CHPRC on 4/21/2015.
1. A footnote will clarify that if there is both a Carcinogen and a Non-Carcinogen performance standard, then the lowest value will be used.
2. The PQL values for all the COPCs are considerably less than the performance standards and this is not anticipated to be an issue for FS1. The comment appears to be taken from the R5 area at T Plant.
3. Accuracy Requirements of "NA" for some COPCs and saying those will be based on the historical performance of the laboratory is not appropriate. These will be further evaluated and defined. [A suggestion was made to consider the approach of DOE/RL-2007-02, "Supplemental RI/FS Work Plan for the 200 Areas Central Plateau Operable Units", Table A2-2 which provides analytical performance requirements for non-radionuclides. Accuracy Requirements for most if not all the FS1 COPCs are listed there and are typically 70 – 130%.]

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-18 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1 | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

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|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

Tables *A-4* and *A-5* in LLBG Closure Plan

**Comment:**

See comments on the corresponding table, including footnotes, of the 221-T R5 storage area closure plan. **See T Plant R5-27:** Are the analytical performance standards in this table equally applicable to asphalt sample results? If so, then the closure plan must include specific language to this effect. Otherwise, analytical performance requirements specific to analysis of asphalt must be provided.

Table D-4 (*A-4 in LLBG*) included a column for constituents with both carcinogenic and non-carcinogenic properties. While implied, the closure plan should be explicit that when values for each are provided, the closure performance standard is the numerically lowest value of the two.

The table entry for arsenic indicates a closure performance standard of 0.667 mg/kg, but a practical quantitation limit of 10 mg/kg. Given that this practical quantitation limit exceeds the decision criteria by a factor of more than 10, it is not acceptable. More specifically, data meeting the required PQL will not result in data of accept able quantity or quality for its intended decision-making purpose. Table D-4 (*A-4 in LLBG*) must be carefully reviewed to ensure that all QC parameters will in fact yield data of acceptable quantity and quality for their intended decision-making purpose.

Footnote C, which applies to parameters where the accuracy requirement (%recovery) is listed as "N/A," states "Determined by the laboratory based on historical data or statistically derived control limits. Limits are reported with the data. Where specific acceptance criteria are listed, those acceptance criteria may be used in place of statistically derived acceptance criteria." Essentially this says that as long as analysis of closure verification samples meet historically observed performance standards of the laboratory analytical method, the data are acceptable. This does not make sense, as the observed historical performance of a laboratory analytical method has absolutely nothing to do with the acceptable decision uncertainty for a specific project to which the laboratory data are to be applied. Laboratory (and field, for that matter) accuracy requirements MUST be based on what is required for decisions to be made based on the data to be within acceptable uncertainty limits, not what the laboratory method historically produces.

**See also comments CW-25,-36,-39; FS1-17; R5-19,-27**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

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|---|---|
| **Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.): | |
| **Resolution Required? (Y/N)** | **Permit Writer (Ecology): Deb Alexander** |
| **Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*: | |
| Add information and language to specify the requirements for asphalt samples (see first paragraph above).<br>Tables D-4 (*A-4 in LLBG*) needs to be reviewed for analytical performance requirements specific to the media being sampled.<br>Table D-4 (*A-4 in LLBG*) needs to be "cleaned up"; need to add aquatic receptors and environmental protection<br>Tables D-4 and D-5 (*A-4 and A-5 in LLBG*) must be carefully reviewed to ensure that all QC parameters will in fact yield data of acceptable quantity and quality for their intended decision-making purpose. | |
| **Other Information:**<br>This is the same comment as FS1-17. | |
| | **Reviewer Concurrence (Initials):** |

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-19 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A3.12 Conditions That Will Be Achieved When Closure Is Complete | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

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|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:
A permit modification request will be submitted after clean closure has been confirmed to remove FS-1 from the sitewide permit active DWMUs.

**Comment:**
See comments on this text in the 221-T F5 storage area closure plan. **From T Plant R5-28:**

Why is the final sentence included? Given that the whole premise of the R5 unit closure requirements under the EPA CAFO is that the unit never had authorization to operate under the permit, why is there any need to remove the 221-T R5 Waste Storage Area DQWMU from the sitewide permit active DWMUS? EPA does agree that following acceptance of the certification of completion of closure by Ecology, the Permittees may request prior approval for a Class 1' permit modification to remove the corresponding closure requirements from the permit – See WAC 173-303-830 Appendix I, Section A.8.

**See also comments CW-19; R5-28**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): **Deb Alexander** |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree: The statement above is also applicable to the FS-1; it was never authorized to operate under the permit, so closing it is required. If it wasn't in the permit, it doesn't need to be removed after closure.

**Other Information:**
Discussed with CHPRC on 4/21/2015. The permit mod to process the FS1 closure plan effectively adds the unit to the sitewide permit. Another permit mod will be needed later after clean closure to remove it from the permit.

| Reviewer Concurrence (Initials): |
| --- |
| |

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-20 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1.A4 Closure Schedule and Time Frame | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

☐ Contingency ☐ Training ☐ WAP ☐ QA/QC ☐ GW/Vadose
☐ Closure ☐ Inspection ☐ Corrective Action ☐ WAC ☐ Omnibus
☐ Other:

**Key Comment Summary:**

**Condition Text**:

1. Should unexpected circumstances arise and an extension to the 180-day closure activity expiration date be deemed necessary, a Class 1 permit modification request will be submitted to Ecology for approval at least 30 days prior to the 180-day expiration date in accordance with WAC 173-303-610(4)(c) and WAC 173-303-830, Appendix I.
2. The extension request would also demonstrate that all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements, have been and will be taken.

**Comment:**

1. WAC 173-303-830, A, Section D.1.b, requires that such modifications be Class 1', with prior director approval.
2. This text omits a demonstration of compliance with the criteria of WAC 173-303-610(4)(b)(i) and (ii). Please revise accordingly.

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): Deb Alexander |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; revise the condition text as indicated above in the Comments section.

**Other Information:**

Discussed with CHPRC on 4/21/2015.
1. The text will be revised to clarify any schedule extension request would be a class 11 permit mod.
2. The text will also say that any extension request will include demonstration of compliance with the criteria in WAC 173-303-610(4)(b)(i) or (ii).

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-21 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1, Figure A-3. FS-1 Outdoor Container Storage Area Closure Schedule Activities | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

Schedule item "Perform Soil Sampling and Analysis" and total schedule duration of 240 days.

**Comment:**
This schedule does not reflect compliance with the time allowed for completion of closure activities at WAC 173-303-610(4)(b). This closure plan has not requested, nor documented satisfaction of any of the requirements for an extension to the time allowed for closure. The schedule must be revised to ensure completion of all closure activities within 180 days of the effective date of the closure plan, or a compliant request for additional time included in the plan.

**See also comments CW-33; R5-29**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): **Deb Alexander** |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; revise the schedule to ensure completion of all closure activities within 180 days.

**Other Information:**
Discussed with CHPRC on 4/21/2015. The schedule will be revised to fit within the allowed 180 days for closure.

**Reviewer Concurrence (Initials):**

| Comment # & Initial | Permit Section/Condition #/ Addendum/Attachment: (Number & Section) | Reviewer(s): |
|---|---|---|
| FS1-22 | Addendum H1, Closure Plans, LLBG Trenches 31-34-94, Section H1, Attachment B, "Summary of Sampling Design" table | EPA Region 10 (DB) |

**Key Comment(s):** *If a key comment, identify the area/topic of the comment*

| | | | | |
|---|---|---|---|---|
| ☐ Contingency | ☐ Training | ☐ WAP | ☐ QA/QC | ☐ GW/Vadose |
| ☐ Closure | ☐ Inspection | ☐ Corrective Action | ☐ WAC | ☐ Omnibus |
| ☐ Other: | | | | |

**Key Comment Summary:**

**Condition Text**:

Table row "Size of grid / Area of grid cell[d] - 4.10637e-005 x 0.000123191 feet / 5.05869e-009 ft[2]"

**Comment:**

These numbers do not make any sense – the grid size is reported as 0.1 to 0.01 mm. Please revise.

**See also comments FS1-13; R5-22,-32,-33,-34,-35; 271-T-1**

**Basis** (Provide the rationale for the change, including regulatory, operational, schedule and cost considerations.):

**Recommendation** (Provide a concise statement of the change being requested and include proposed rewording for the condition if appropriate.):

| Resolution Required? (Y/N) | Permit Writer (Ecology): **Deb Alexander** |
|---|---|

**Comment Resolution** (provide justification if comment NOT accepted or partially accepted)--*To be completed by Ecology*:

We agree; the grid size is not appropriate. Ecology is looking at the VSP outputs provided with each DWMU closure plan, and evaluating their adequacy with regards to the unit being sampled.

**Other Information:**

Program wide understanding of VSP is needed; meetings were held to discuss VSP. Ecology is requesting info from Energy to examine how VSP was applied in each DWMU - **Received and in process**.

Discussed with CHPRC on 4/21/2015. The FS1 site will be re-evaluated using the VSP program using a triangular grid. The number of samples and grid size will be adjusted.

**Reviewer Concurrence (Initials):**